

Year 9 Design and Technology – Outline Programme of Study

Taught on a Carousel System with different start points for different classes. All students will have covered three topics by the end of the academic year.

	Food	Textiles	Product Design	Engineering	Graphics
Big ideas/ topics	<p>The need to make appropriate choices when selecting foods for peoples' individual needs.</p> <p>The importance of good hydration</p> <p>Global food traditions</p> <p>Develop food preparation and cooking techniques including food presentation.</p> <p>The morals and ethics surrounding food production and consumption.</p>	<p>Designing to meet UN Sustainable goal 12, Responsible Consumption.</p> <p>Explore and experiment with embroidery in order to develop designs.</p> <p>Plan production of hat using a flow diagram.</p> <p>Make a hat by joining the components accurately and using commercial templates.</p>	<p>Timber types and their environmental impact.</p> <p>Manufacturing flow diagram.</p> <p>Learning to construct wood joints by producing box using off cuts of hardwood and softwood, a laser cut shape and vacuum formed insert for the box.</p> <p>Evaluation of design ideas.</p>	<p>Properties of metals and why they have these properties.</p> <p>Improving the properties of metals.</p> <p>Engineering tolerance</p> <p>Inclusive design, ergonomics and anthropometrics</p> <p>Working drawings</p> <p>Drawing techniques</p> <p>Manufacturing plan</p> <p>Cutting drilling and shaping metal.</p>	<p>Ethical production and designer responsibilities.</p> <p>Explore typography</p> <p>Types of paper and card</p> <p>Use of Nets.</p> <p>Produce prototype packaging using card, paper and nets.</p>
Key Knowledge	<p>Eatwell Guide & Government Dietary Goals</p> <p>Diet through life stages & Teenage Diets</p> <p>Making Vegetable Risotto</p> <p>Vegetarian & Medical Diets</p> <p>Religious Diets</p> <p>Making Cheesecake</p> <p>Street Food</p> <p>Packaging</p> <p>Making Empanadas</p> <p>Hydration & Energy Drinks</p> <p>Animal Care RSPCA & Egg Production</p> <p>Making Lasagne</p> <p>Fair Trade</p> <p>Using Yeast</p> <p>Making Stuffed Crust Pizza</p> <p>Types of Food Service</p> <p>Food waste</p> <p>Making Foccacia</p> <p>Fruit Carving</p>	<p>UN Sustainable Goal 12</p> <p>Environmental Issues with Textiles and their solutions.</p> <p>Sustainable producer research, Bangbangcrash.</p> <p>Music festival and Bucket hat research.</p> <p>Design Specification</p> <p>Mood board</p> <p>Initial Ideas</p> <p>Embroidery</p> <p>Final Design</p> <p>Working Drawings</p> <p>How to use Paper Templates</p> <p>Making a bucket hat</p> <p>Flow diagram</p> <p>Natural and Manmade fibres</p> <p>Evaluation.</p>	<p>Wider Issues Research</p> <p>Materials Research & Task Analysis</p> <p>Client Profile & Client Survey</p> <p>Design Specification</p> <p>Wood Joints</p> <p>Initial Ideas of box x 2</p> <p>Modelling of wood</p> <p>Joints & further development of the lid</p> <p>Isometric Drawings & Final Design</p> <p>Manufacturing Specification</p> <p>Cutting List & Making of the Box</p> <p>Materials (Metals) & Pewter Casting Designs on 2D Design</p> <p>Materials (Polymers) & Vacuum Forming</p> <p>Evaluation</p>	<p>Health & safety</p> <p>Task Analysis</p> <p>Metals & Properties of Metals</p> <p>Properties of Composite Materials</p> <p>Inclusive Design</p> <p>Ergonomics & Anthropometrics</p> <p>Design Specification</p> <p>Engineering tools & equipment</p> <p>Skills task</p> <p>Manufacturing Plan</p> <p>Drawing Techniques</p> <p>Working drawings, Orthographic & Isometric</p> <p>Exploded Drawing</p> <p>Manufacturing Plan</p> <p>Making – Bottle Opener</p>	<p>Designer Responsibilities Research</p> <p>Task Analysis</p> <p>Client Profile & Client Survey</p> <p>Existing Packaging Analysis</p> <p>Papers and Board</p> <p>Design Specification</p> <p>Introduction to Typography, Fonts</p> <p>Challenge</p> <p>Nets</p> <p>Introduction to Isometric Drawing</p> <p>Initial Ideas</p> <p>Modelling with existing nets</p> <p>Final Design</p> <p>Making: Model of Final Design</p> <p>Volumes & Areas</p> <p>Evaluation</p>

Further information and reading list

Explorer Activities

- Watch any of the **How Its Made** series on You Tube
- Watch **Inside The Factory** on BBC
- STEM Design and Technology resources for home learning;

<https://www.stem.org.uk/secondary/resources/collections/home-learning-support/d-and-t-resources>

- Pinterest 34 Teaching Ideas D&T & STEM:

<https://www.pinterest.co.uk/rachelhaddell/teaching-ideas-dt/>

- BBC Good Food, A guide to cookery skills by age

<https://www.bbcgoodfood.com/howto/guide/guide-cookery-skills-age>

- British Nutrition Foundation

<https://www.nutrition.org.uk/healthy-sustainable-diets/>

- Technology Student.com; <https://www.technologystudent.com/>

- You Tube has many useful videos, just search topics.

Books

- You Can Draw Tom Gates with Liz Pichon
- Cooking Step By Step: More than 50 Delicious Recipes for Young Cooks



- 100 Things to Know About Architecture - In a Nutshell by Louise O'Brien

Ways to support and extend student learning in this subject

Support for pupils

All of our KS3 work booklets are well scaffolded with tables, cloze sentences, visual aids, questions to help focus analysis etc. This is very helpful for SEN students especially those who struggle to organise their thoughts and it also helps all students to work independently. This means that it is possible to catch up on missed work at home using the online booklet and lesson Power Points on Google Classroom. You can refer to these to help your child with their homework or if they are absent from school or prior to a lesson to give them a head start.

Encourage your child to come to D&T after school clubs to build on their practical skills.

Stretch and Challenge Pupils.

Pupils are encouraged to challenge themselves by both answering super questions when they have completed their work and ensuring they have fully completed the "Challenge Yourself" sections in their work books. They can have a go at this online if they do not manage to get it done in class.

Learn key words: use the glossary at the back of your booklets, (copy on Google Classroom) to identify key words that cannot not yet be recalled or spelt correctly. Create flashcards and complete regular quizzing at home.